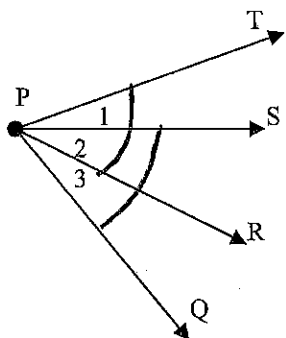


Name Key

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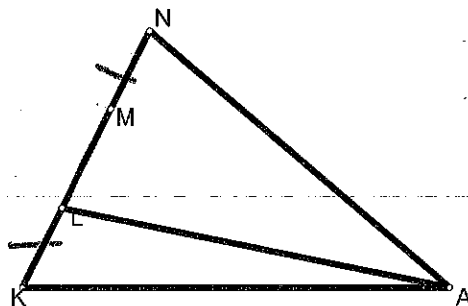
Chapter 2: Proofs  
(2.6-2.8 worksheet #2)

1. Given:  $m\angle TPR = m\angle QPS$   
Prove:  $m\angle 1 = m\angle 3$



Statements	Reasons
① $m\angle TPR = m\angle QPS$	① Given
② $m\angle TPR = m\angle 1 + m\angle 2$ $m\angle QPS = m\angle 2 + m\angle 3$	② AAP
③ $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$	③ Subst
④ $m\angle 2 = m\angle 2$	④ Reflexive
⑤ $m\angle 1 = m\angle 3$	⑤ Subtraction

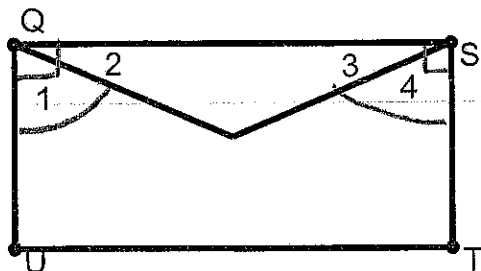
2. Given:  $KL = MN$

Prove:  $\overline{KM} \cong \overline{LN}$ 

Statements	Reasons
① $KL = MN$	① Given
② $LM = LM$	② Ref
③ $KL + LM = LM + MN$	③ Add
④ $KL + LM = KM$ $LM + MN = LN$	④ SAP
⑤ $KM = LN$	⑤ Subst
⑥ $\overline{KM} \cong \overline{LN}$	⑥ Def of $\cong$

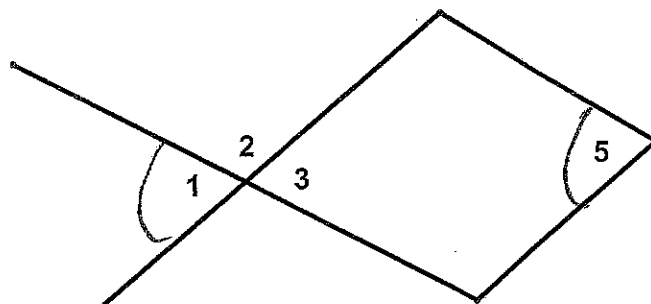
3. Given:  $\overline{UQ} \perp \overline{QS}$ ;  $\overline{TS} \perp \overline{QS}$   
 $\angle 1 \cong \angle 4$

Prove:  $\angle 2 \cong \angle 3$



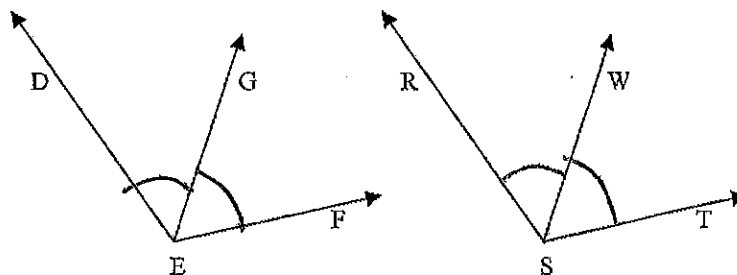
Statements	Reasons
1. $\sim$	1. Given
2. $\angle UQS$ is a right angle; $\angle QST$ is a right angle	2. def of $\perp$
3. $\angle 1 + \angle 2$ are compl $\angle 3 + \angle 4$ are compl	3. The Complement Theorem
4. $\angle 2 \cong \angle 3$	4. Compl. of $\cong$ angles are $\cong$

4. Given:  $\angle 1 \cong \angle 5$   
 Prove:  $\angle 2$  and  $\angle 5$  are supplementary



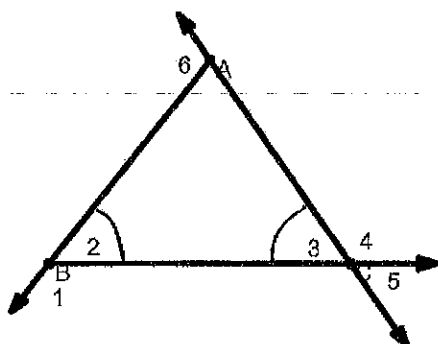
Statements	Reasons
1) $\angle 1 \cong \angle 5$	1. Given
2) $m\angle 1 = m\angle 5$	2. def of $\cong$
3) $\angle 1$ and $\angle 2$ are supplementary	3. suppl. thm
4) $m\angle 1 + m\angle 2 = 180$	4. def of $\cong$
5) $m\angle 5 + m\angle 2 = 180$	5. subst
6) $\angle 2$ and $\angle 5$ are supplementary	6. def of suppl.

5. Given:  $\overrightarrow{EG}$  is the bisector of  $\angle DEF$ ,  
 $\overrightarrow{SW}$  is the bisector of  $\angle RST$   
 $m\angle DEG = m\angle RSW$   
 Prove:  $m\angle DEF = m\angle RST$



Statements	Reasons
1) $\overrightarrow{EG}$ is the bisector of $\angle DEF$ , $\overrightarrow{SW}$ is the bisector of $\angle RST$	1) Given
2) $m\angle DEG = m\angle GEF$ $m\angle WST = m\angle RSW$	② Def of $\angle$ Bis
3) $m\angle DEG + m\angle GEF = m\angle DEF$ $m\angle WST + m\angle RSW = m\angle RST$	③ A.A.P
4) $m\angle DEG + m\angle DEG = m\angle DEF$ $m\angle RSW + m\angle RSW = m\angle RST$	④ Subst
5) $2m\angle DEG = m\angle DEF$ $2m\angle RSW = m\angle RST$	⑤ Subst
6) $m\angle DEG = m\angle RSW$	6) Given
7) $2m\angle DEG = 2m\angle RSW$	⑦ Mult
8) $m\angle DEF = m\angle RST$	⑧ Subst

6. Given:  $\angle 2 \cong \angle 3$   
 Prove:  $\angle 1 \cong \angle 4$

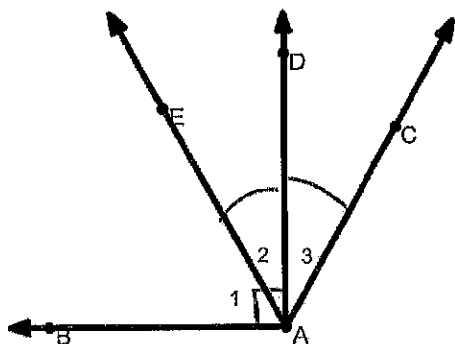


Statements	Reasons
① $\angle 2 \cong \angle 3$	① Given
② $\angle 1 + \angle 2$ are suppl $\angle 3 + \angle 4$ are suppl	② Suppl Thm
③ $\angle 1 \cong \angle 4$	③ Suppl. of $\cong$ $\angle$ s are $\cong$

7. Given:  $\overrightarrow{AB} \perp \overrightarrow{AD}$

$\overrightarrow{AD}$  bisects  $\angle EAC$

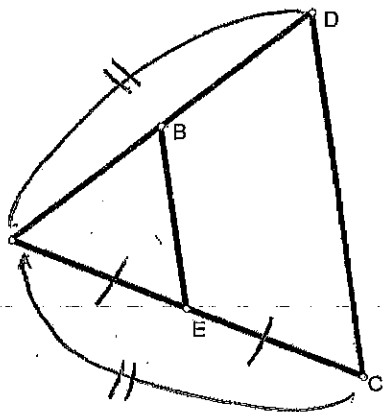
Prove:  $m\angle 1 + m\angle 3 = 90$



Statements	Reasons
① $\overrightarrow{AB} \perp \overrightarrow{AD}$	① Given
② $\angle BAD$ is rt $\angle$	② Def of $\perp$
③ $\angle 1 + \angle 2$ are compl.	③ Compl Thm
④ $m\angle 1 + m\angle 2 = 90$	④ Def of compl.
⑤ $m\angle 2 = m\angle 3$	⑤ def of $\angle$ Bis.
⑥ $m\angle 1 + m\angle 3 = 90$	⑥ Subst

8. Given: midpoint E of  $\overline{AC}$ ,  
 $AC = AD$

Prove:  $2AE = AD$



Statements	Reasons
① $\overline{AC} = \overline{AD}$	① Given
② $AE = EC$	② Def of Midpt
③ $AE + EC = AC$	③ Segm + Post (A.P.)
④ $AE + AE = AC$	④ Subst
⑤ $2AE = AC$	⑤ Subst
⑥ $2AE = AD$	⑥ Subst